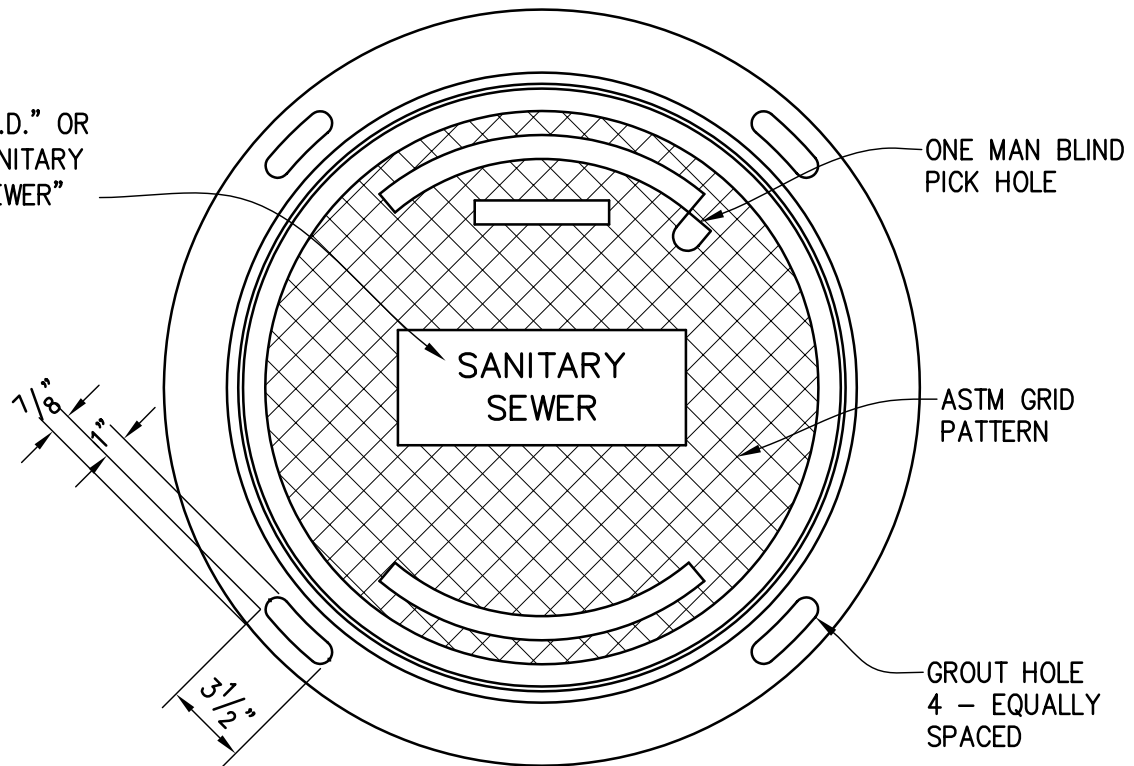
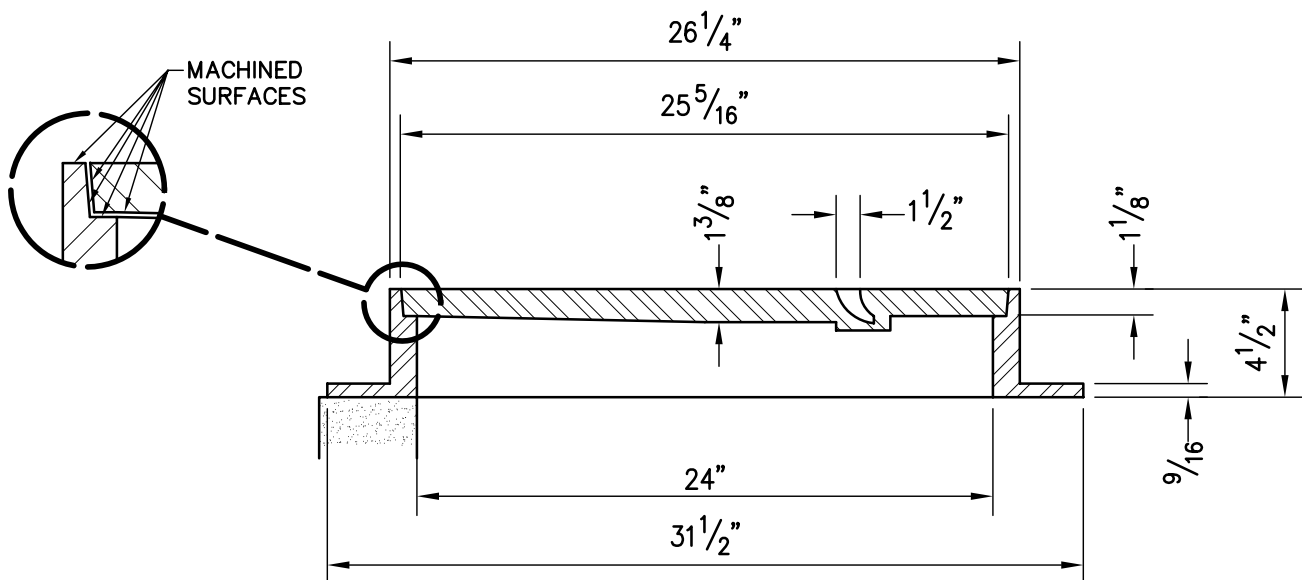


"G.S.D." OR
"SANITARY
SEWER"



PLAN



SECTION

SCALE: $1\frac{1}{2}" = 1'-0"$

NOTE:

1. FRAME AND COVER SHALL BE D&L SUPPLY A-1024M, PHOENIX IRON WORKS P-1090 R/G, OR EQUAL.
2. FRAME AND COVER SHALL MEET OR EXCEED THE REQUIREMENTS OF AASHTO H-20 LOADING.

APPROVED BY:

..... HOWARD L. HOFFMAN

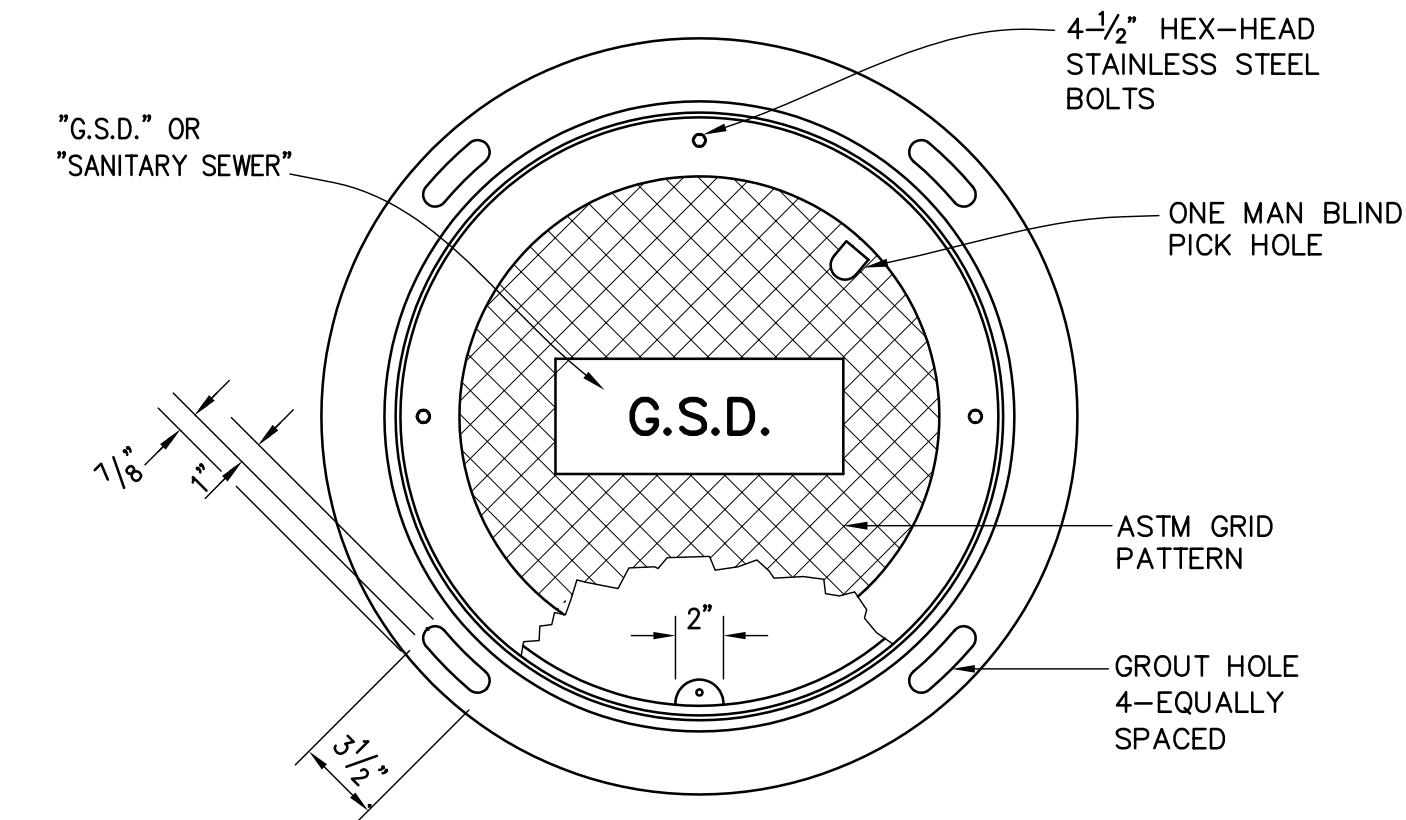
DATE: FEBRUARY 2003

GRANADA SANITARY DISTRICT
STANDARD DETAIL

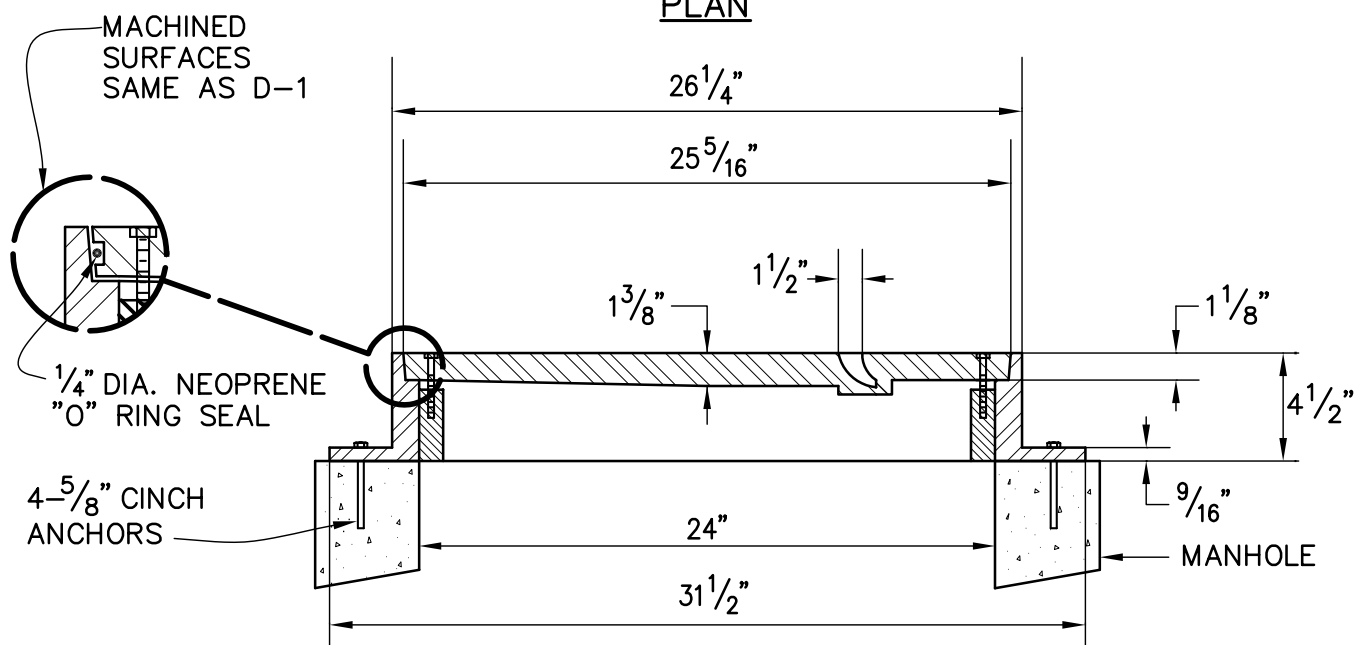
MANHOLE FRAME AND COVER

STANDARD No.

1



PLAN



SECTION

SCALE: 1 $\frac{1}{2}$ " = 1'-0"

NOTES:

1. MAXIMUM ALLOWABLE PRESSURE SHALL BE 10 P.S.I.
2. FRAME AND COVER SHALL MEET OR EXCEED THE REQUIREMENTS OF AASHTO H-20 LOADING.
3. FRAME AND COVER SHALL BE D&L SUPPLY E-1928, PHOENIX IRON WORKS P-1002, OR EQUAL.

APPROVED BY:

HOWARD L. HOFFMAN

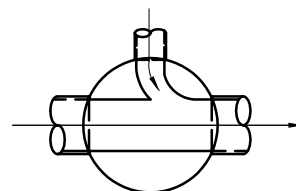
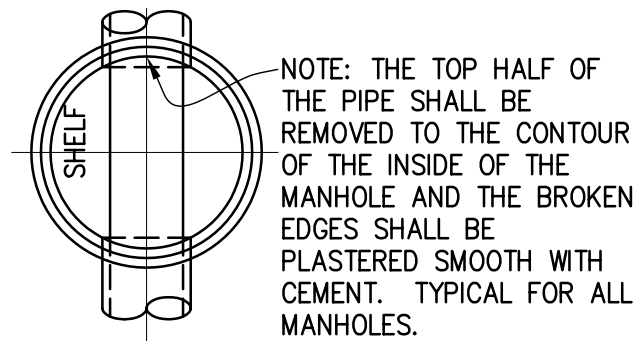
DATE: FEBRUARY 2003

GRANADA SANITARY DISTRICT
STANDARD DETAIL

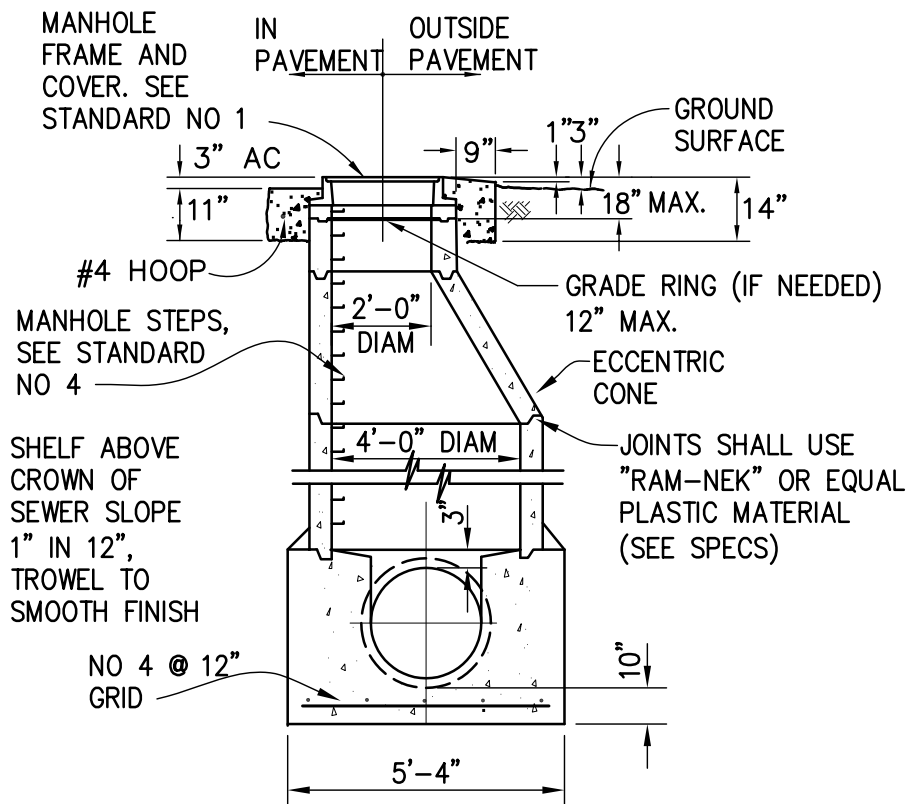
**PRESSURE TYPE
MANHOLE FRAME AND COVER**

STANDARD No.

2



TYPICAL CHANNEL CONFIGURATION PLANS



NOTES:

1. ALL STEEL TO BE 3" CLEAR.
2. MANHOLE SHELF SHALL BE MORTARED TO A SLOPE OF 1"/FT.
3. PREFORMED PLASTIC SEALING GASKET SHALL BE "RAM-NEK" OR APPROVED EQUAL.
4. STANDARD WATER STOPS SHALL BE INCORPORATED INTO THE MANHOLE BASE FOR ALL PENETRATIONS INTO THE MANHOLE.
5. MANHOLE THROAT LOCATION TO BE OPPOSITE THE LARGEST SHELF AREA OR AS DIRECTED BY THE ENGINEER.
6. CONCRETE SHALL BE 3/4" CLASS A.

NOT TO SCALE

APPROVED BY:

HOWARD L. HOFFMAN

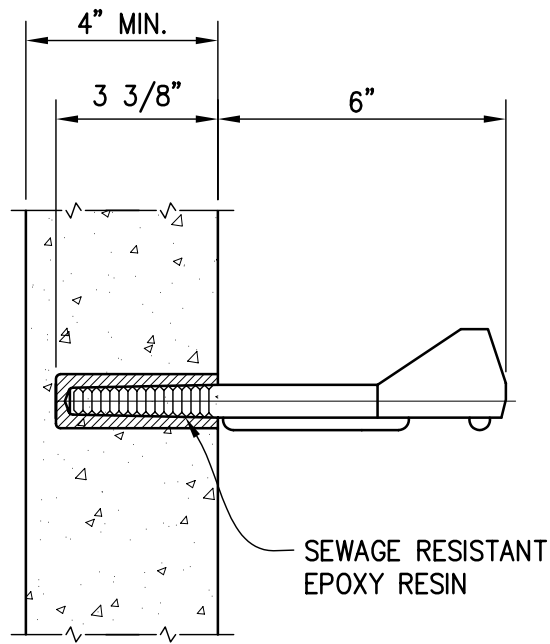
DATE: FEBRUARY 2003

GRANADA SANITARY DISTRICT STANDARD DETAIL

STANDARD No.

STANDARD MANHOLE

3



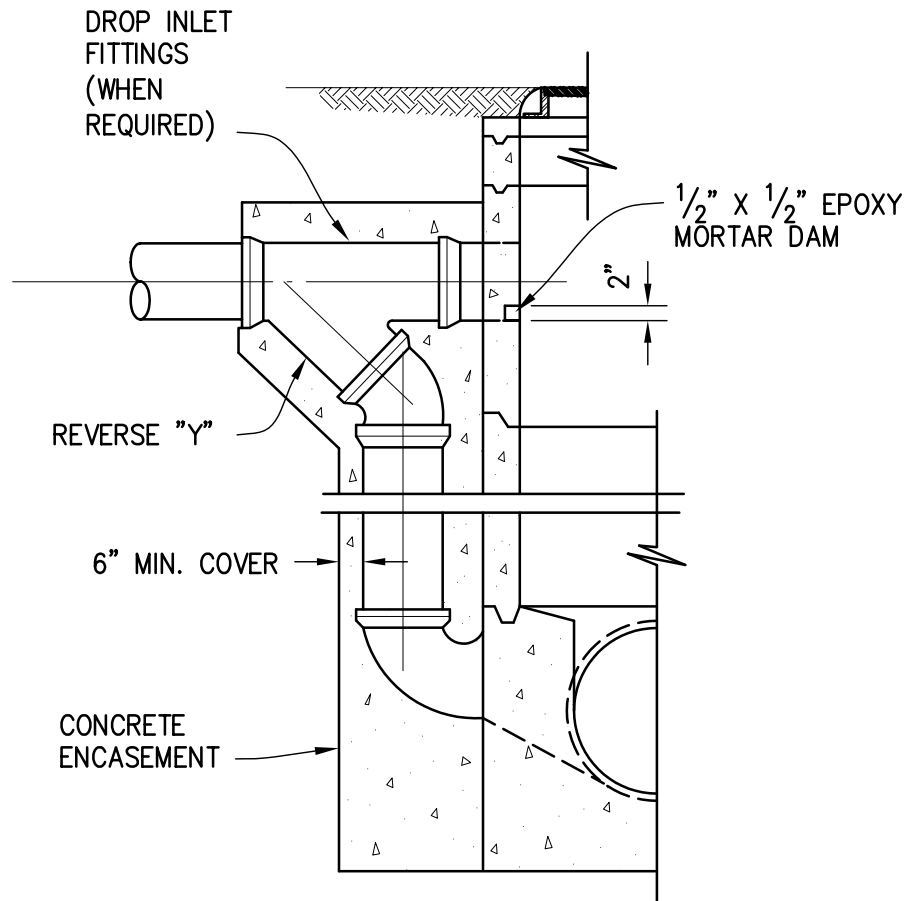
INSTALLATION DETAIL

NOTES:

1. MANHOLE STEPS SHALL BE POLYPROPYLENE, AND CONFORM TO THE REQUIREMENTS OF A.S.T.M. D4101, TYPE II. THE STEEL USED IN MANUFACTURING SHALL BE DEFORMED $\frac{1}{2}$ " REINFORCING ROD GRADE 60. CONFORM TO ALL REQUIREMENTS OF A.S.T.M. A.615.
2. MANHOLE STEPS SHALL BE UNIFORMLY SPACED AT A MAXIMUM OF 12". THE LOWEST STEP SHALL BE PLACED NOT LESS THAN 8" OR MORE THAN 18" ABOVE THE CONCRETE SHELF.
3. FOR MANHOLES 4 FEET OR LESS DEPTH (RIM TO PIPE INVERT), MANHOLE STEPS ARE NOT REQUIRED.
4. STEPS TO BE CAST IN PLACE DURING MANUFACTURE OF PRECAST PIPE RINGS OR ANCHORED WITH SEWAGE RESISTANT EPOXY RESIN.

NOT TO SCALE

APPROVED BY: ... HOWARD L. HOFFMAN ... DATE: ... FEBRUARY 2003 ...	GRANADA SANITARY DISTRICT STANDARD DETAIL <hr/> MANHOLE STEP	STANDARD No. <div style="font-size: 2em; font-weight: bold; text-align: center;">4</div>
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WITH DROP INLET

NOTE:

USE DROP INLET WHEN THE DISTANCE BETWEEN THE OUTLET PIPE CROWN AND THE INLET PIPE INVERT IS GREATER THAN 12 INCHES.

NOT TO SCALE

APPROVED BY:

...HOWARD L. HOFFMAN...

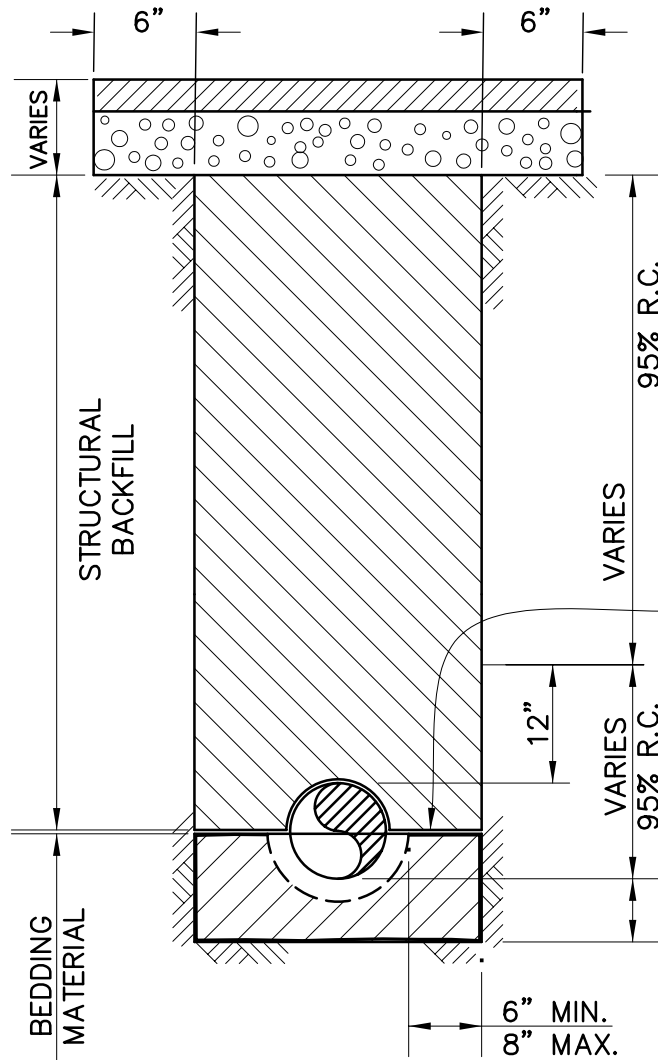
DATE: ...FEBRUARY 2003...

GRANADA SANITARY DISTRICT
STANDARD DETAIL

MANHOLE DROP INLET

STANDARD No.

5



ROAD SECTION PER SAN
MATEO COUNTY OR CITY
OF HALF MOON BAY
STANDARDS

GEOTEXTILE: ENCAPSULATE
PIPE AND BEDDING. OVERLAP
EDGES 6" MIN. GEOTEXTILE
SHALL BE MIRAFI 600X
OR EQUAL

TYPICAL TRENCH SECTION

STRUCTURAL BACKFILL

STRUCTURAL BACKFILL REQUIREMENTS
(CALTRANS CALIF. TEST 202) MIN. SAND
EQUIVALENT OF 20.

SIEVE SIZES	PERCENTAGE PASSING
1-1/2"	100
3/4"	80-100
#4	30-60
#30	5-35
#200	0-12

BEDDING MATERIAL

GRANULAR BEDDING MATERIAL REQUIREMENTS
(ASTM D448 SIZE #67)

SIEVE SIZES	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	20-55
#4	0-10
#8	0-5

NOT TO SCALE

APPROVED BY:

... HOWARD L. HOFFMAN ...

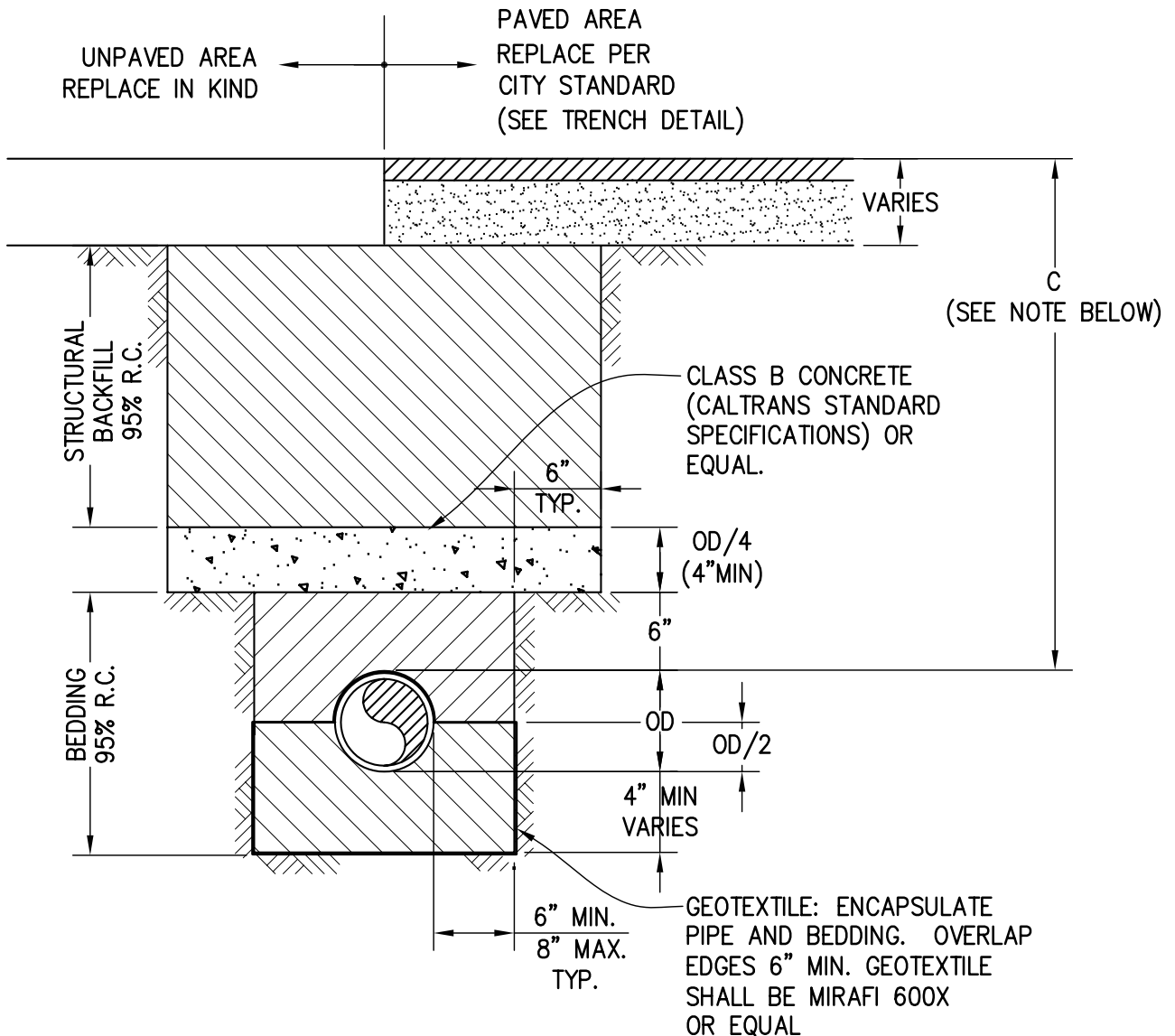
DATE: ... FEBRUARY 2003 ...

GRANADA SANITARY DISTRICT
STANDARD DETAIL

STANDARD BACKFILL DETAIL

STANDARD No.

6



NOTES:

1. THIS DETAIL APPLIES WHERE COVER "C" IS LESS THAN 3 FEET AND SHALL ONLY BE USED WHERE APPROVED BY DISTRICT ENGINEER.
2. PIPE MATERIAL SHALL BE POLYETHYLENE WRAPPED DUCTILE IRON. CONCRETE CAPS SHALL NOT BE USED OVER PLASTIC PIPE.
3. BEDDING MATERIAL SHALL BE COMPACTED PRIOR TO CONCRETE PLACING.
4. SEE STANDARD TRENCH DETAIL, STANDARD No.6 FOR BEDDING AND BACKFILL MATERIAL REQUIREMENTS.
5. DISCONNECT THE PIPE BEDDING EACH 200 FT± OR MIDWAY BETWEEN MANHOLES, AND PLACE 5 FT OF COHESIVE SOIL TO STOP WATER FLOW ALONG THE TRENCH THROUGH THE BEDDING.

NOT TO SCALE

APPROVED BY:

... HOWARD L. HOFFMAN ...

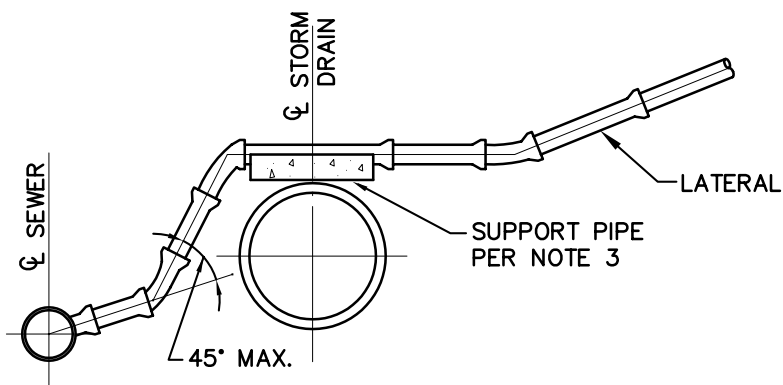
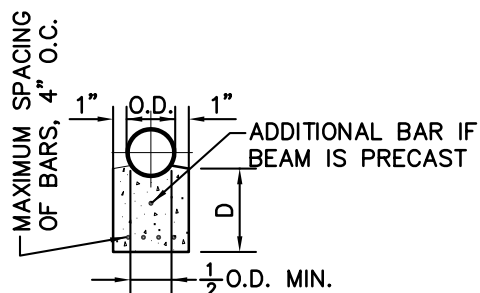
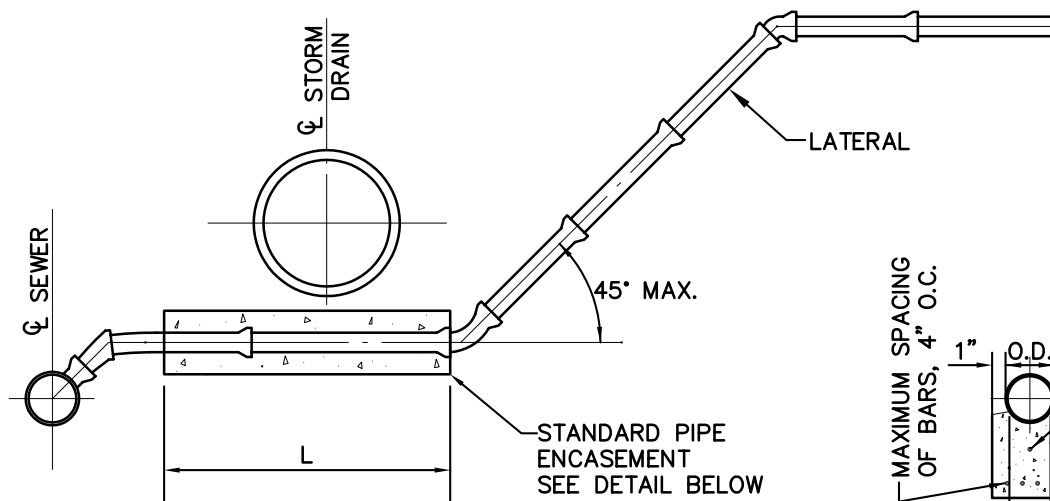
DATE: FEBRUARY 2003

GRANADA SANITARY DISTRICT
STANDARD DETAIL

CONCRETE CAP

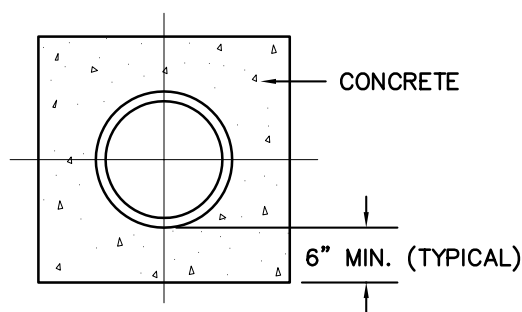
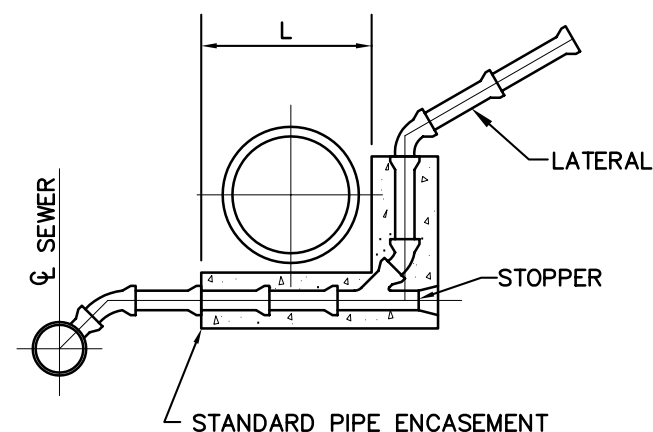
STANDARD No.

7



DIMENSIONS OF
REINFORCED CONCRETE BEAM

	Depth of Cover			
	0' to 8'		8'-1" to 16'	
	D	Bar No.	D	Bar No.
4'	8"	4	8"	4
5'	8"	4	9"	5
6'	8 1/2"	5	10 1/2"	5
7'	9"	5	11 1/2"	6
8'	10"	5	12 1/2"	6
9'	11"	6	13 1/2"	6
10'	12"	6	15"	7



STANDARD PIPE ENCASEMENT

NOTES:

1. THIS DETAIL APPLIES WHEN CONSTRUCTION OF A NEW STORM DRAIN INTERFERES WITH AN EXISTING SEWER LATERAL.
2. MINIMUM SLOPE FOR 4-INCH LATERAL SHALL BE 1/4" PER FOOT.
3. L=WIDTH OF STORM DRAIN TRENCH PLUS EXTENSION AT BOTH SIDES TO FIRST PIPE JOINT AT OR BEYOND TRENCH.
4. SUPPORT PIPE ON CONCRETE BEAM ACROSS TRENCH PLUS 2' ON EITHER SIDE OF TRENCH.

NOT TO SCALE

APPROVED BY:

... HOWARD L. HOFFMAN ...

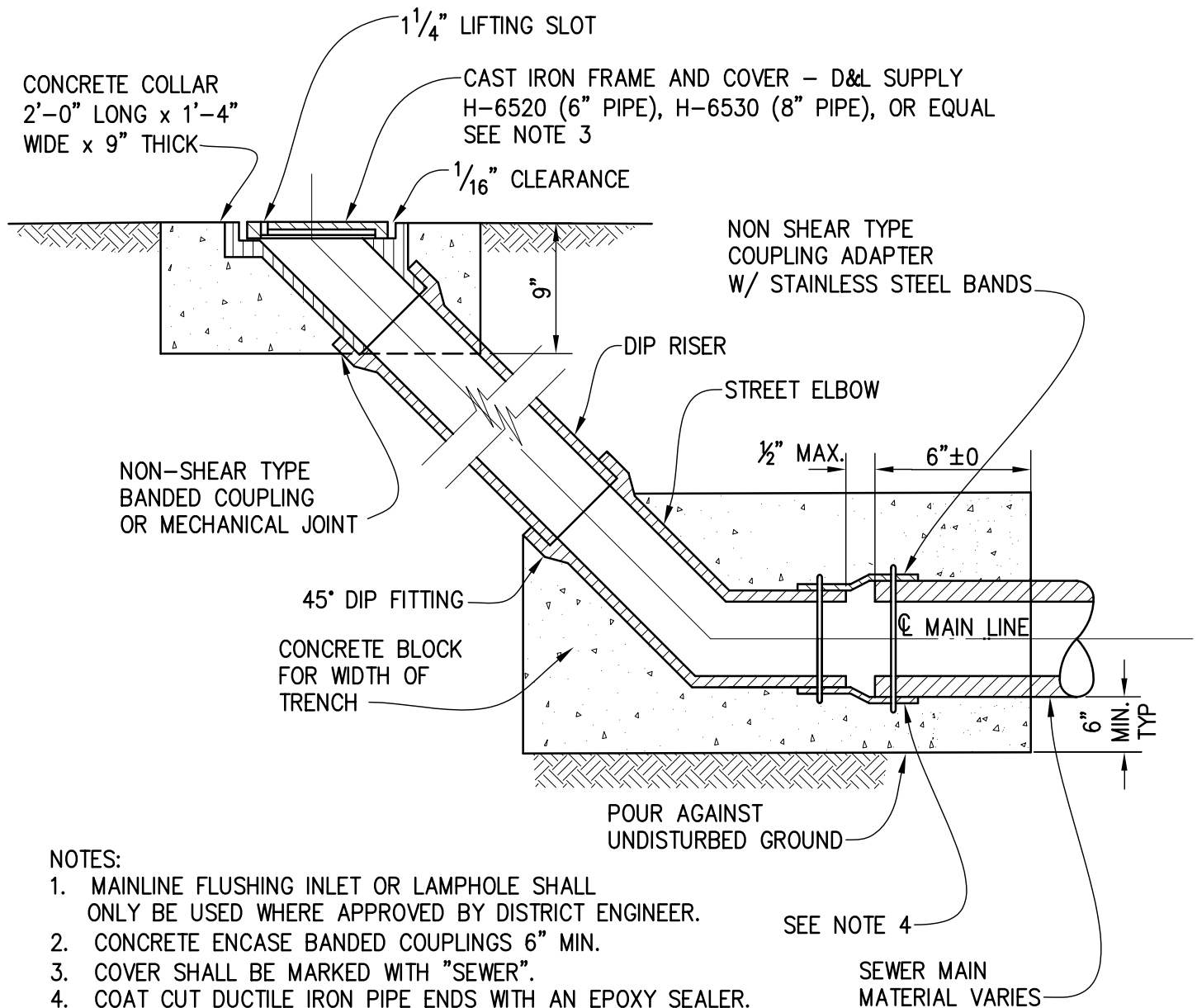
DATE: FEBRUARY 2003

GRANADA SANITARY DISTRICT
STANDARD DETAIL

SERVICE LATERAL UTILITY CROSSING

STANDARD No.

8



NOT TO SCALE

APPROVED BY:

... HOWARD L. HOFFMAN ...

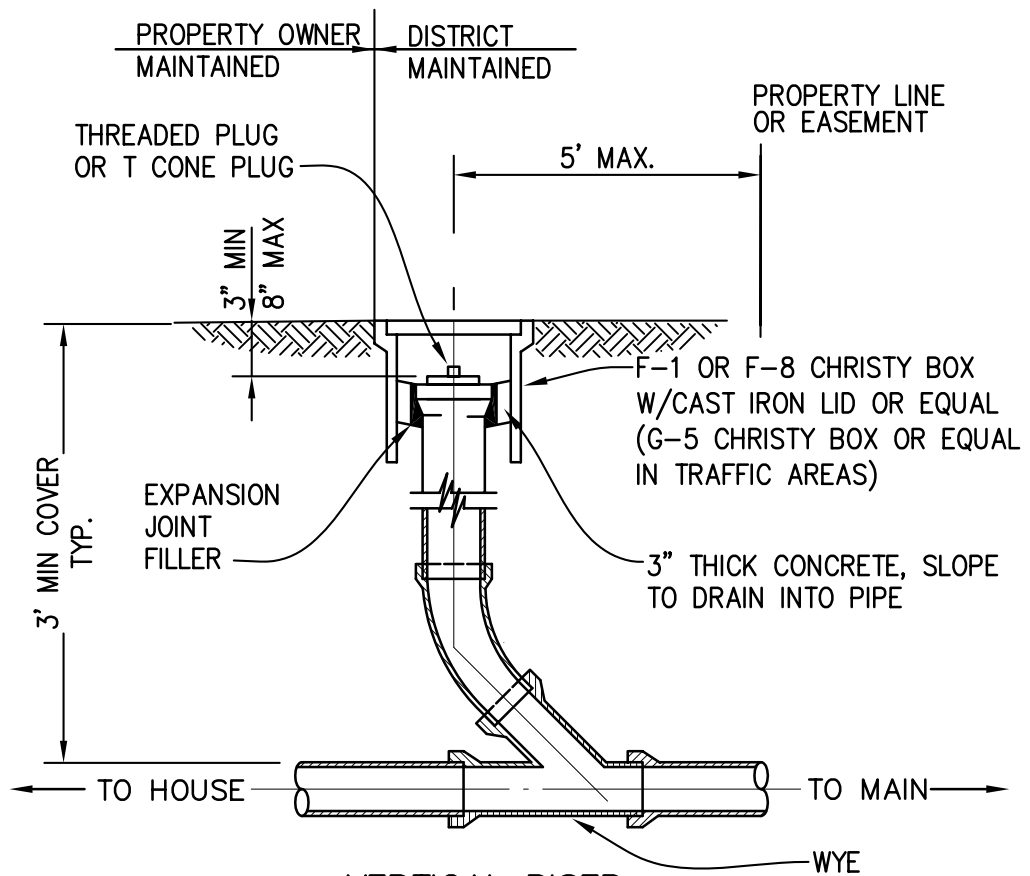
DATE: ... FEBRUARY 2003 ...

GRANADA SANITARY DISTRICT
STANDARD DETAIL

FLUSHING INLET OR LAMPHOLE

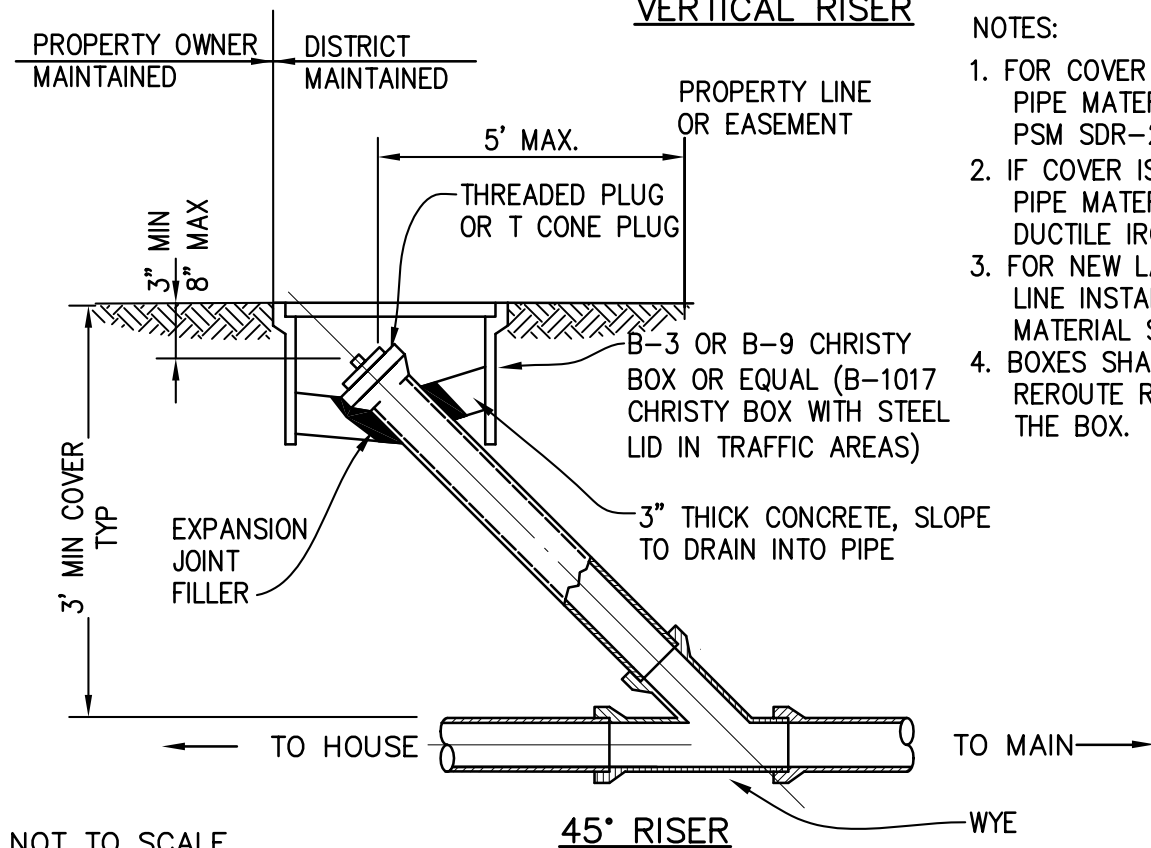
STANDARD No.

9



NOTES:

1. FOR COVER 3' AND GREATER, PIPE MATERIAL SHALL BE PVC PSM SDR-26 OR HDPE SDR-17.
2. IF COVER IS LESS THAN 3', PIPE MATERIAL SHALL BE DUCTILE IRON.
3. FOR NEW LATERAL AND MAIN LINE INSTALLATIONS, PIPE MATERIAL SHALL BE THE SAME.
4. BOXES SHALL BE RAISED TO REROUTE RUNOFF AROUND THE BOX.



NOT TO SCALE

APPROVED BY:

... HOWARD L. HOFFMAN ...

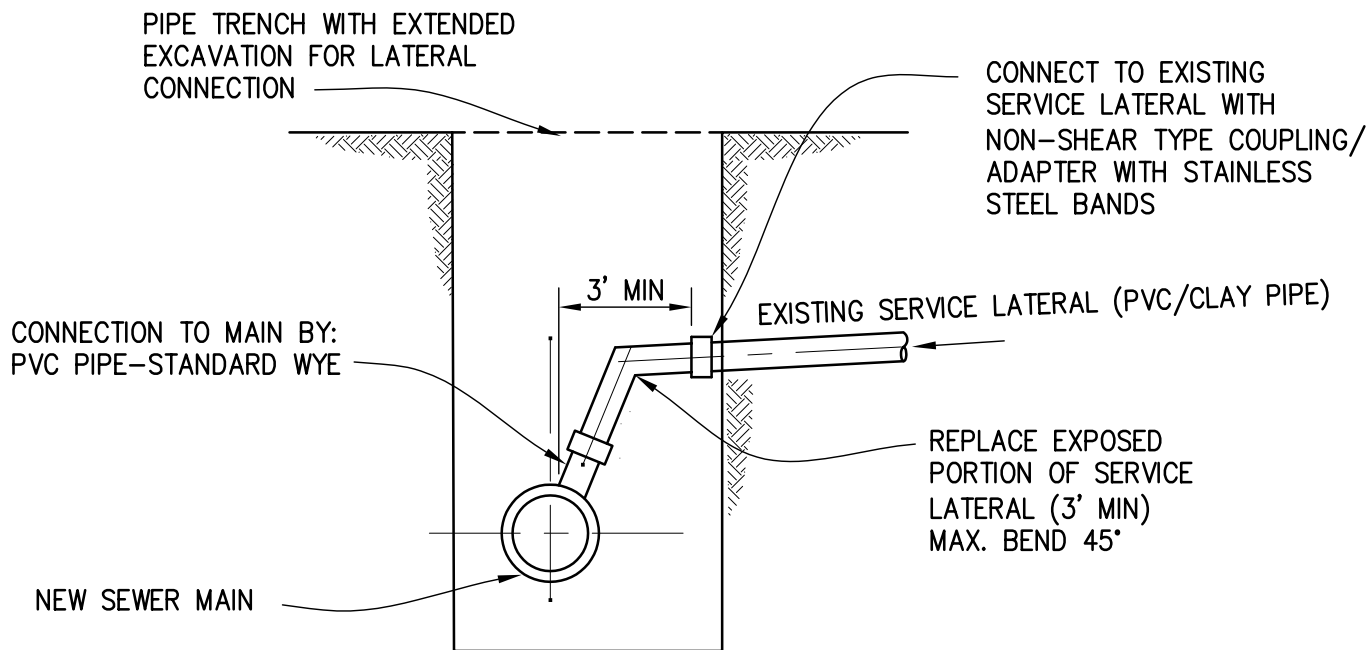
DATE: ... FEBRUARY 2003 ...

GRANADA SANITARY DISTRICT
STANDARD DETAIL

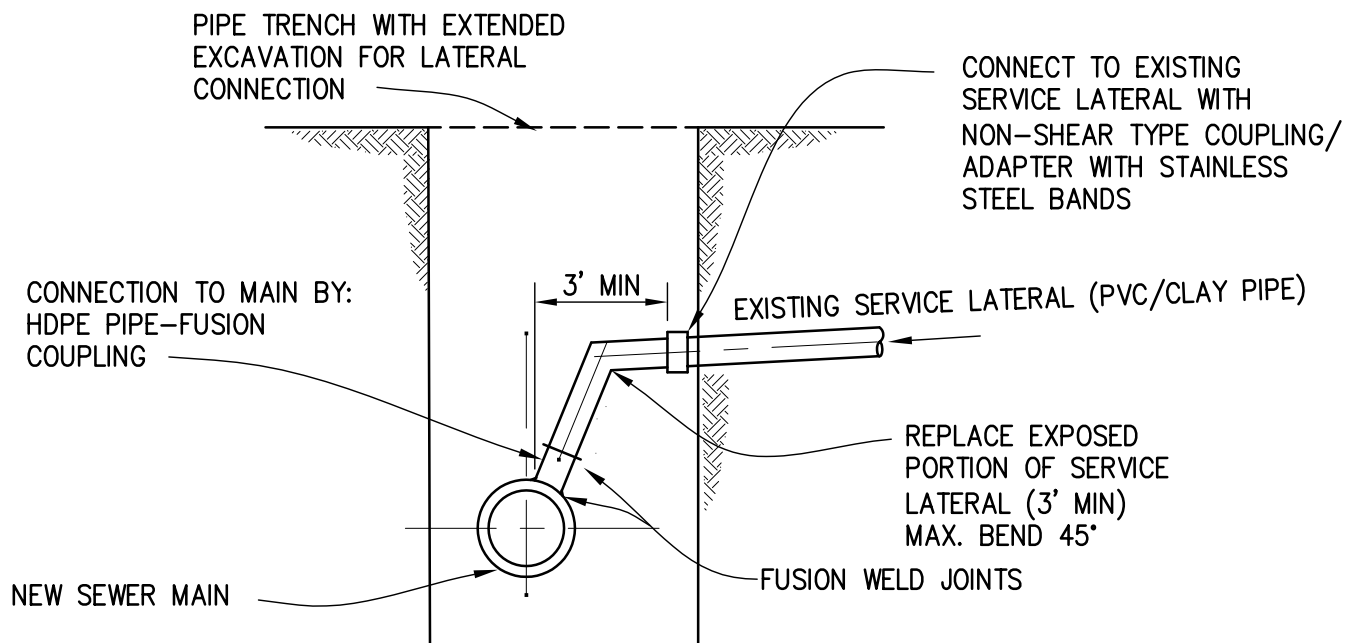
**TYPICAL
SERVICE LATERAL CLEANOUT**

STANDARD No.

10



PVC PIPE LATERAL CONNECTION



NEW MAIN LINE HDPE LATERAL CONNECTION

NOTES:

1. REPLACEMENT SERVICE LATERALS SHALL BE SAME MATERIAL AS MAIN.
2. ROOT CONTROL SHALL BE APPLIED TO JOINTS AT NEW/EXISTING SERVICE LATERAL CONNECTION PER SPEC SECTION C5.
3. PVC - MAXIMUM GAP BETWEEN PIPES AT COUPLINGS $\frac{1}{2}$ ".

NOT TO SCALE

APPROVED BY:

...HOWARD L. HOFFMAN...

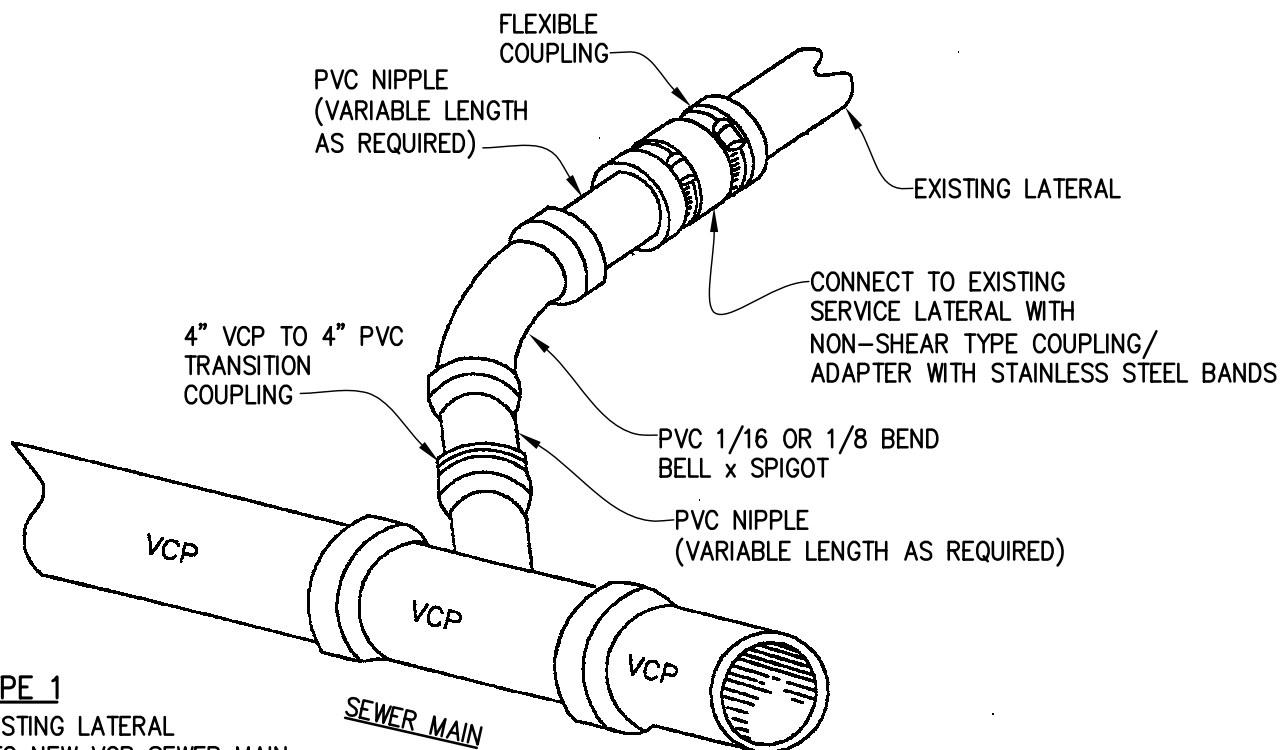
DATE: ...FEBRUARY 2003...

GRANADA SANITARY DISTRICT
STANDARD DETAIL

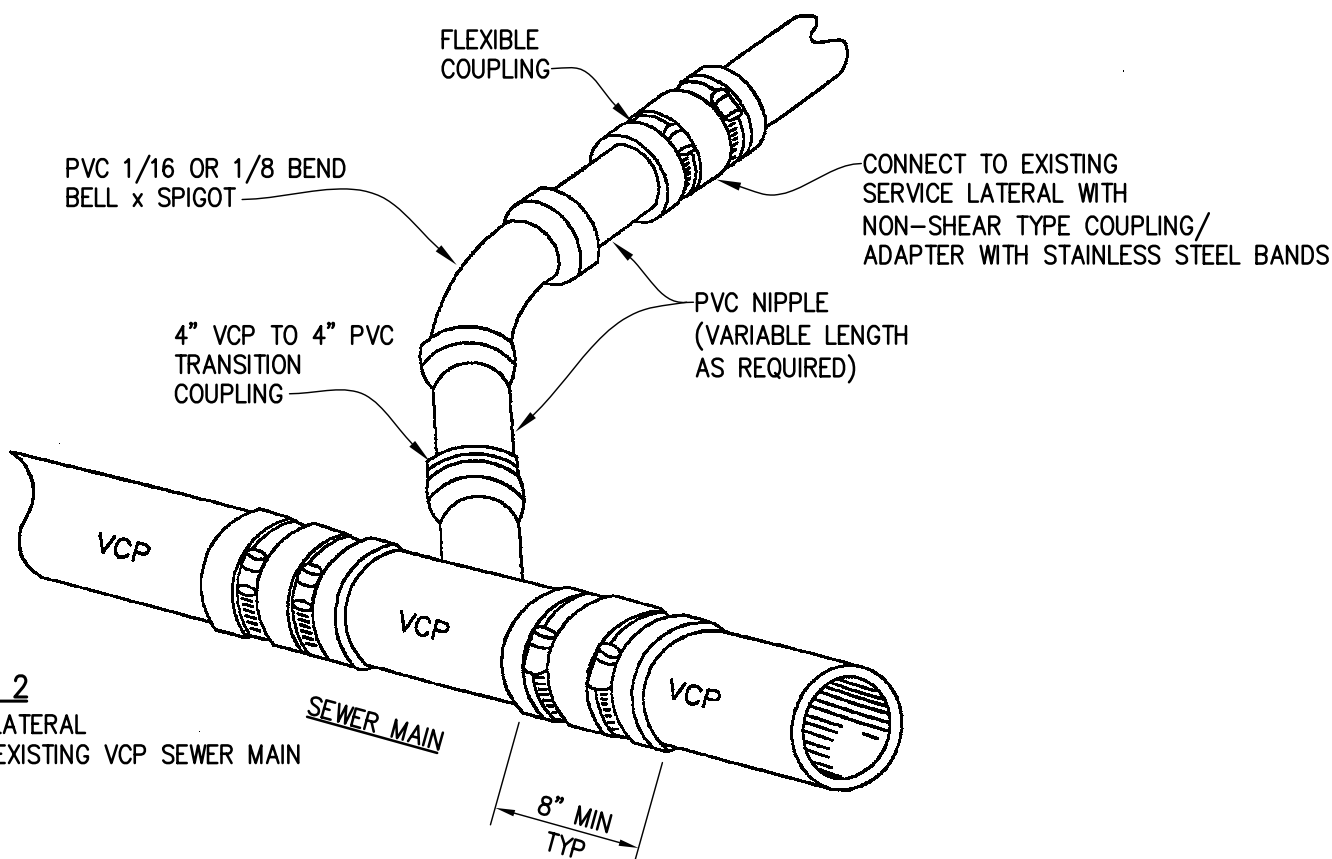
**LATERAL RECONNECTION DETAIL
NEW SEWER MAIN CONSTRUCTION**

STANDARD No.

11



TYPE 1
EXISTING LATERAL
INTO NEW VCP SEWER MAIN



TYPE 2
NEW LATERAL
INTO EXISTING VCP SEWER MAIN

NOT TO SCALE

APPROVED BY:

... HOWARD L. HOFFMAN ...

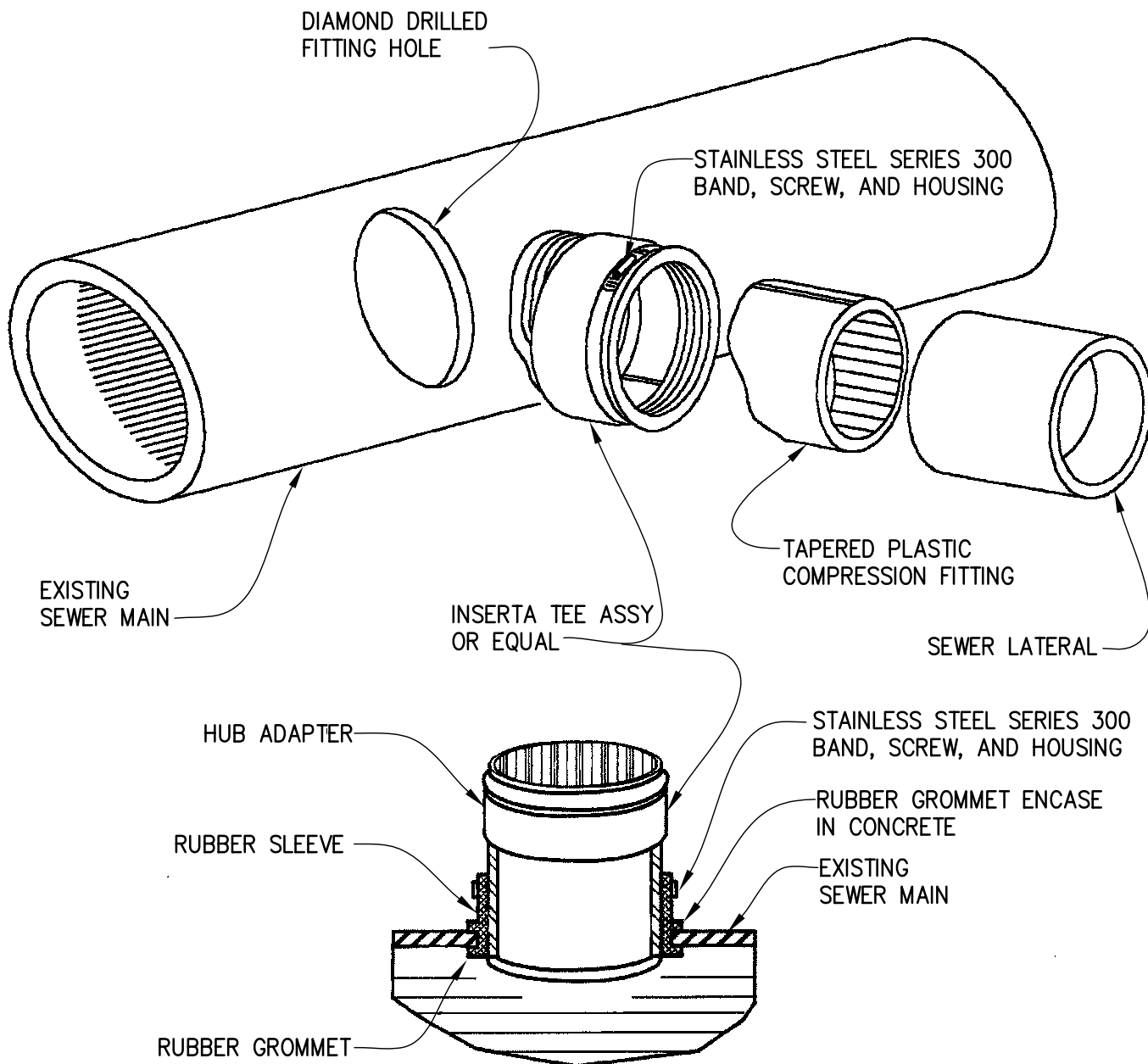
DATE: ... FEBRUARY 2003 ...

GRANADA SANITARY DISTRICT
STANDARD DETAIL

**LATERAL CONNECTION TO
VCP MAIN – TYPE 1 & TYPE 2**

STANDARD No.

12



NOTES:

1. THIS CAN ONLY BE USED WITH THE PRIOR APPROVAL OF THE DISTRICT ENGINEER
2. ENCASE RUBBER GROMMET 6" ALL AROUND IN CLASS A CONCRETE

NOT TO SCALE

APPROVED BY:

..... HOWARD L. HOFFMAN

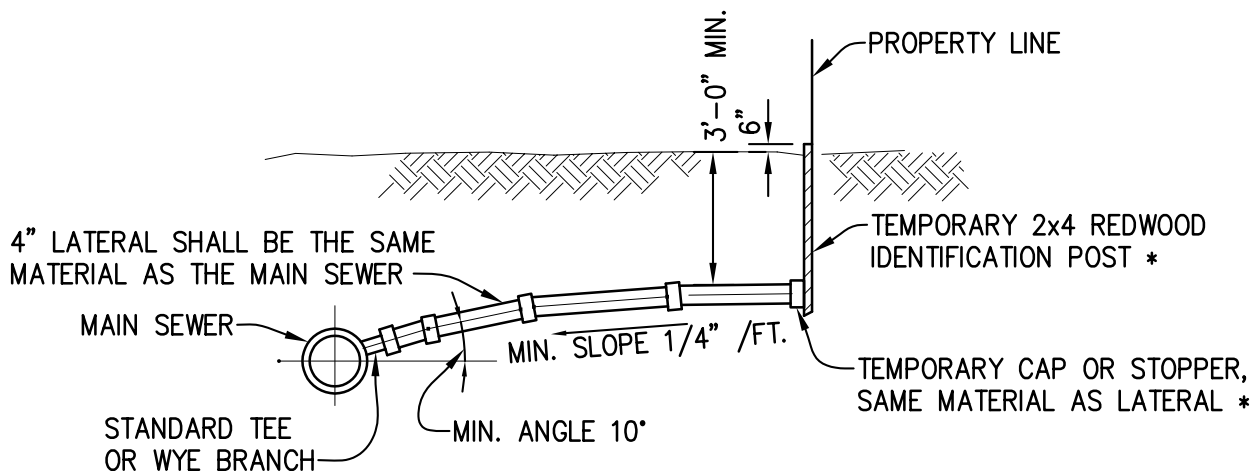
DATE: .. FEBRUARY 2003

GRANADA SANITARY DISTRICT
STANDARD DETAIL

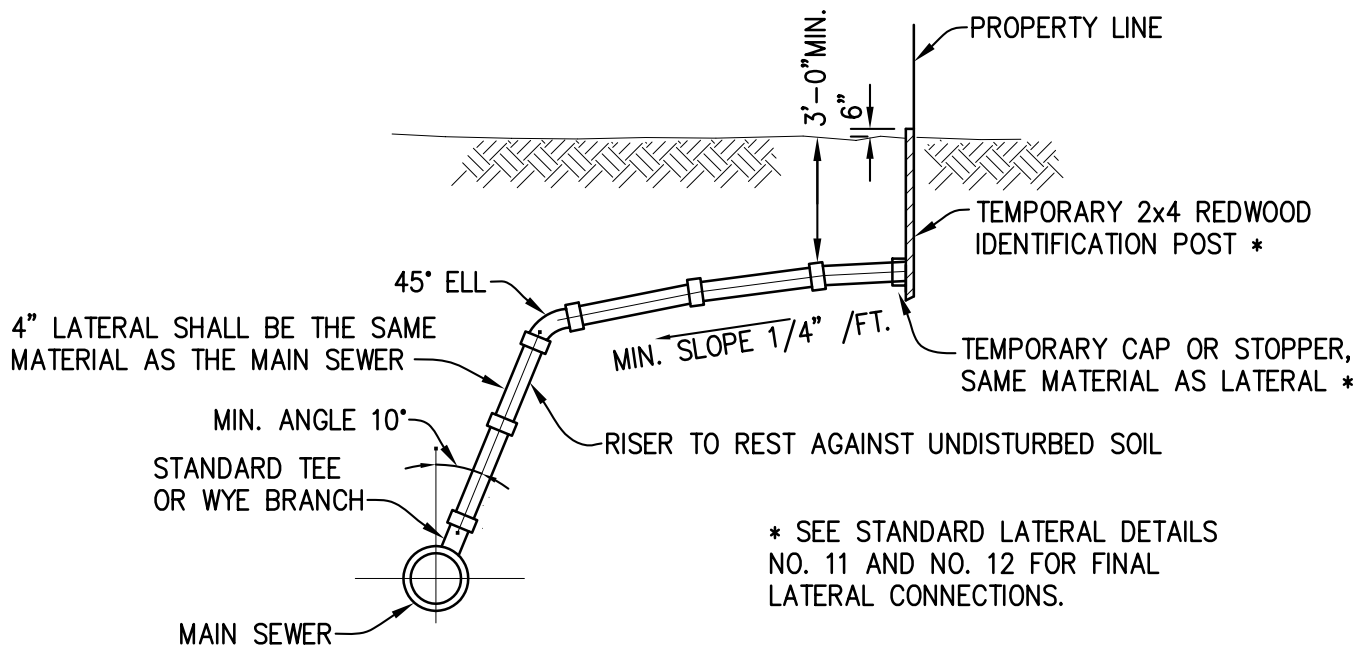
**LATERAL CONNECTION TO
EXISTING VCP MAIN – TYPE 5**

STANDARD No.

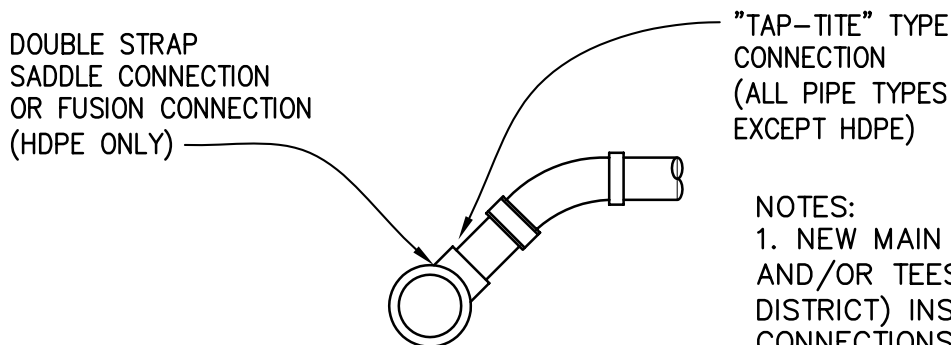
13



SHALLOW SEWER – 10' AND LESS



DEEP SEWER – GREATER THAN 10'



CONNECTION TO EXISTING MAIN
TO BE USED UNLESS OTHERWISE

- NOTES:
1. NEW MAIN SEWERS SHALL HAVE WYES AND/OR TEES (AS APPROVED BY DISTRICT) INSTALLED FOR LATERAL CONNECTIONS.
 2. ENCASE ALL COUPLINGS OR SADDLE CONNECTIONS IN CLASS A CONCRETE 6" ALL AROUND AND BEYOND ENDS.

NOT TO SCALE

APPROVED BY:

...HOWARD L. HOFFMAN...

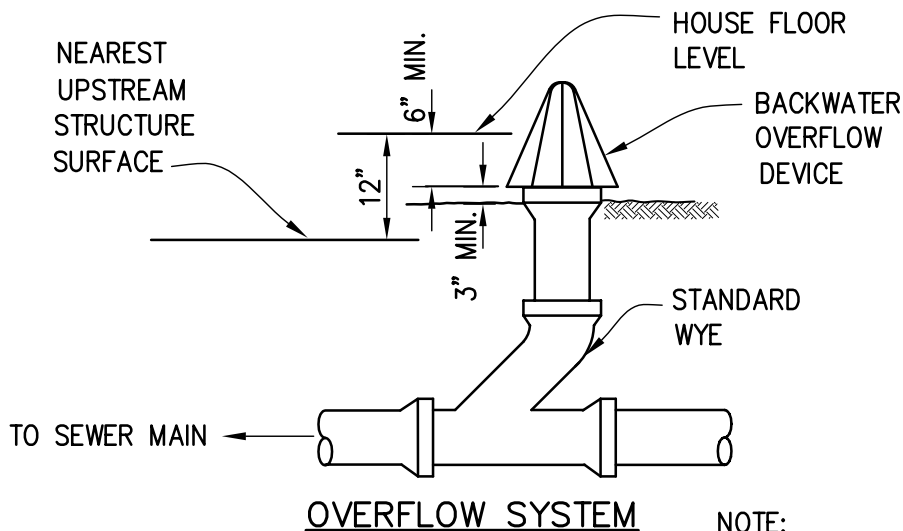
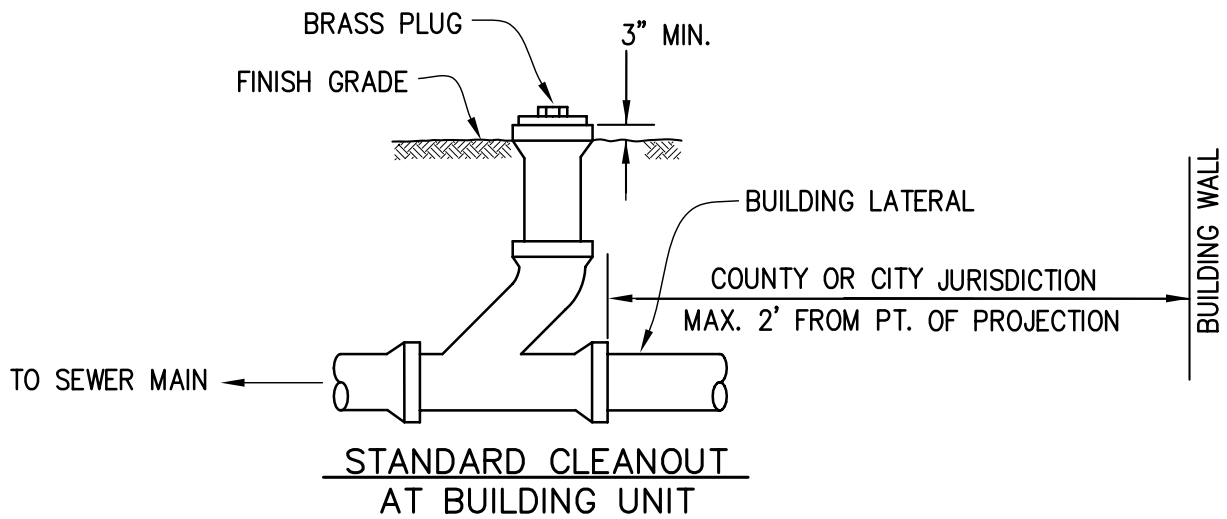
DATE: FEBRAURY 2003

GRANADA SANITARY DISTRICT
STANDARD DETAIL

LATERAL CONNECTION

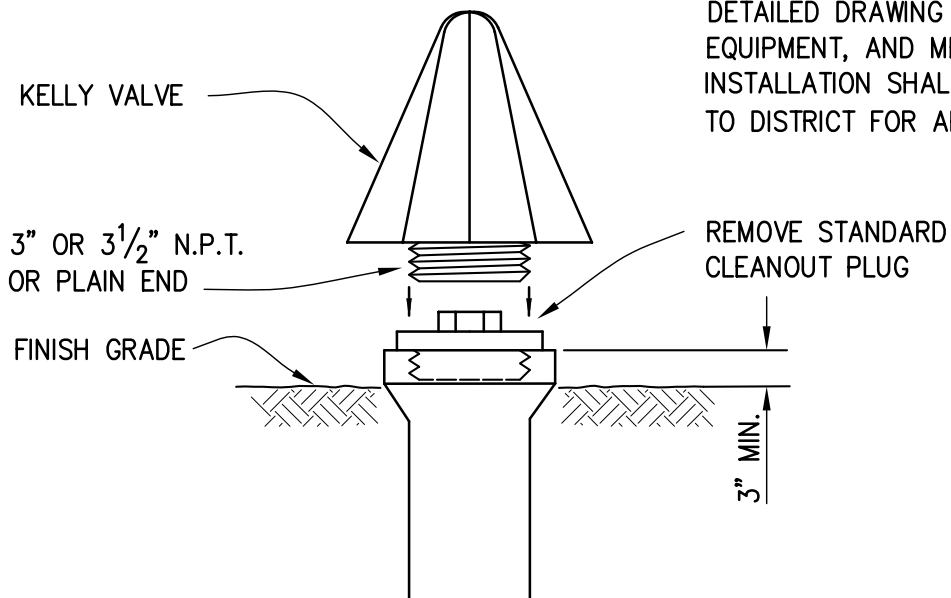
STANDARD No.

14



NOTE:

DETAILED DRAWING OF LOCATION,
EQUIPMENT, AND METHOD OF
INSTALLATION SHALL BE SUBMITTED
TO DISTRICT FOR APPROVAL.



NOT TO SCALE

APPROVED BY:

....HOWARD L. HOFFMAN....

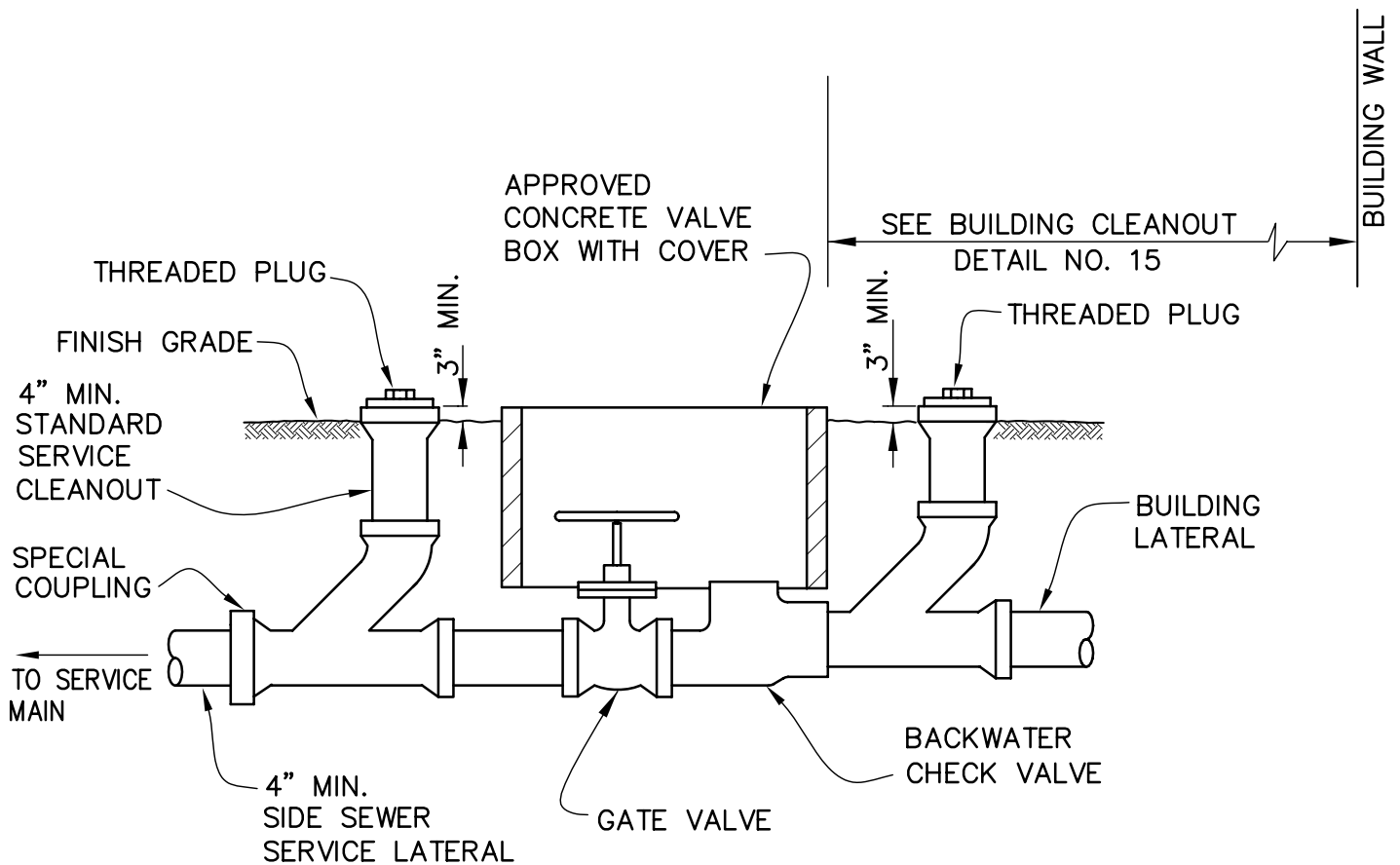
DATE:....FEBRUARY 2003.....

GRANADA SANITARY DISTRICT
STANDARD DETAIL

**BUILDING CLEANOUT AND
BACKWATER OVERFLOW DEVICE**

STANDARD No.

15



NOT TO SCALE

APPROVED BY:

....HOWARD L. HOFFMAN....

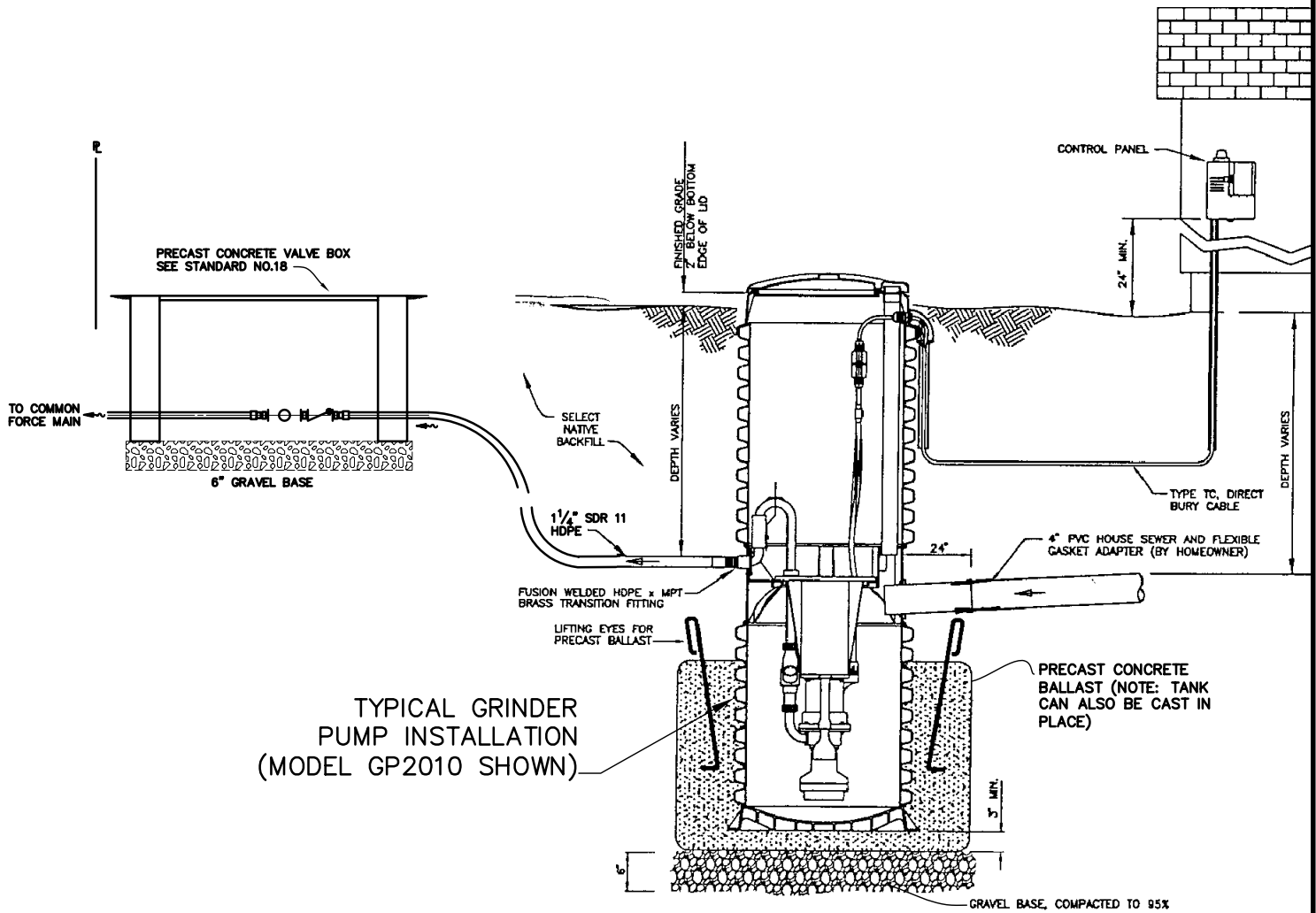
DATE: ...FEBRUARY 2003.....

GRANADA SANITARY DISTRICT
STANDARD DETAIL

**BACKWATER CHECK VALVE AND
SHUTOFF SYSTEM**

STANDARD No.

16



NOT TO SCALE

APPROVED BY:

... HOWARD L. HOFFMAN ...

DATE: FEBRUARY 2003

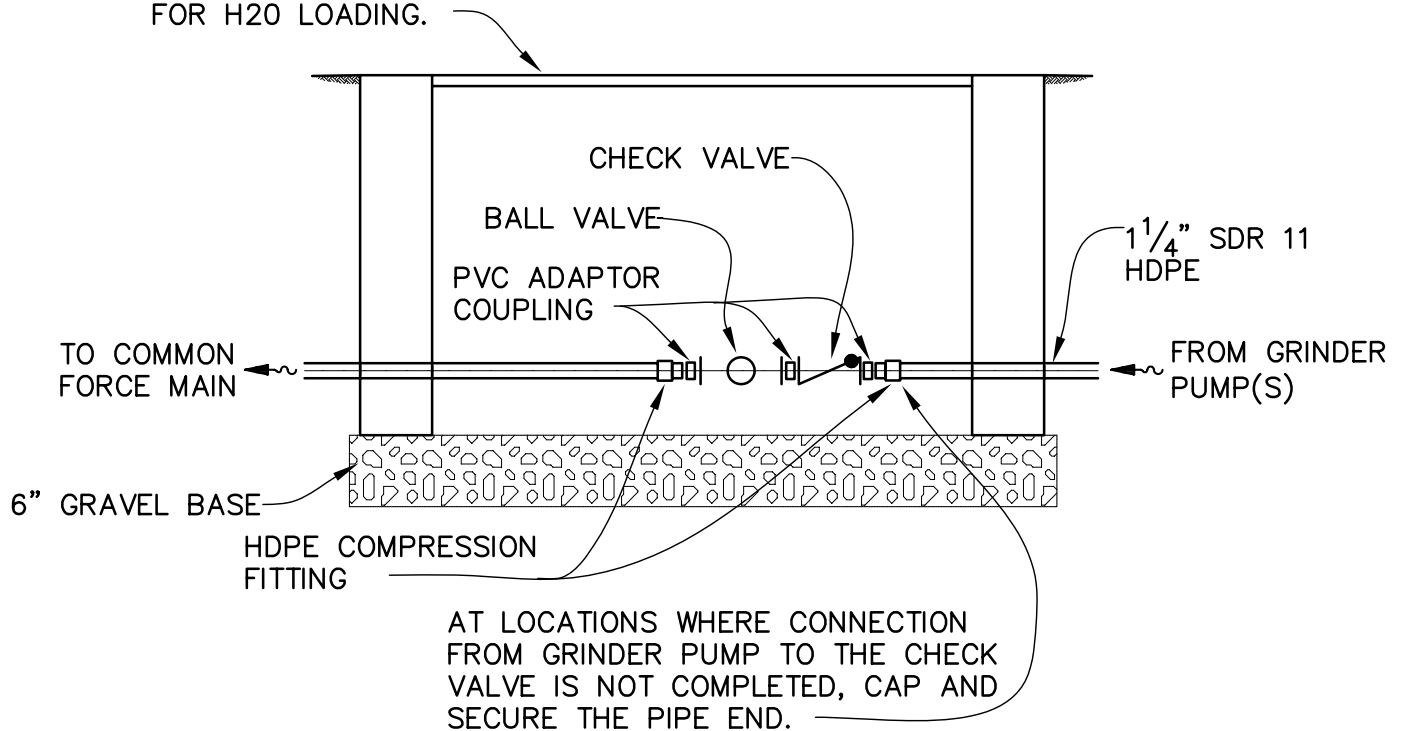
GRANADA SANITARY DISTRICT
STANDARD DETAIL

**TYPICAL
GRINDER PUMP INSTALLATION**

STANDARD No.

17

PRECAST CONCRETE VALVE BOX WITH
REMOVABLE TRAFFIC LID, DESIGNED
FOR H2O LOADING.



NOT TO SCALE

APPROVED BY:

...HOWARD L. HOFFMAN...

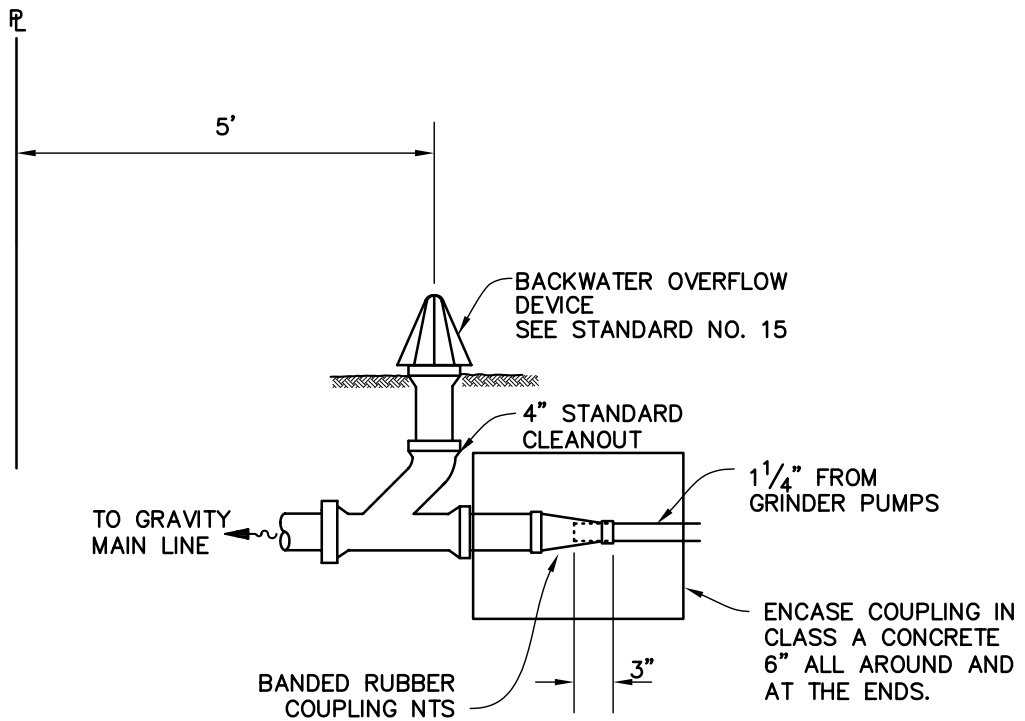
DATE: ...FEBRUARY 2003...

GRANADA SANITARY DISTRICT
STANDARD DETAIL

**GRINDER PUMP SYSTEM
CONNECTION TO
COMMON FORCE MAIN**

STANDARD No.

18



NOT TO SCALE

APPROVED BY:

... HOWARD L. HOFFMAN ...

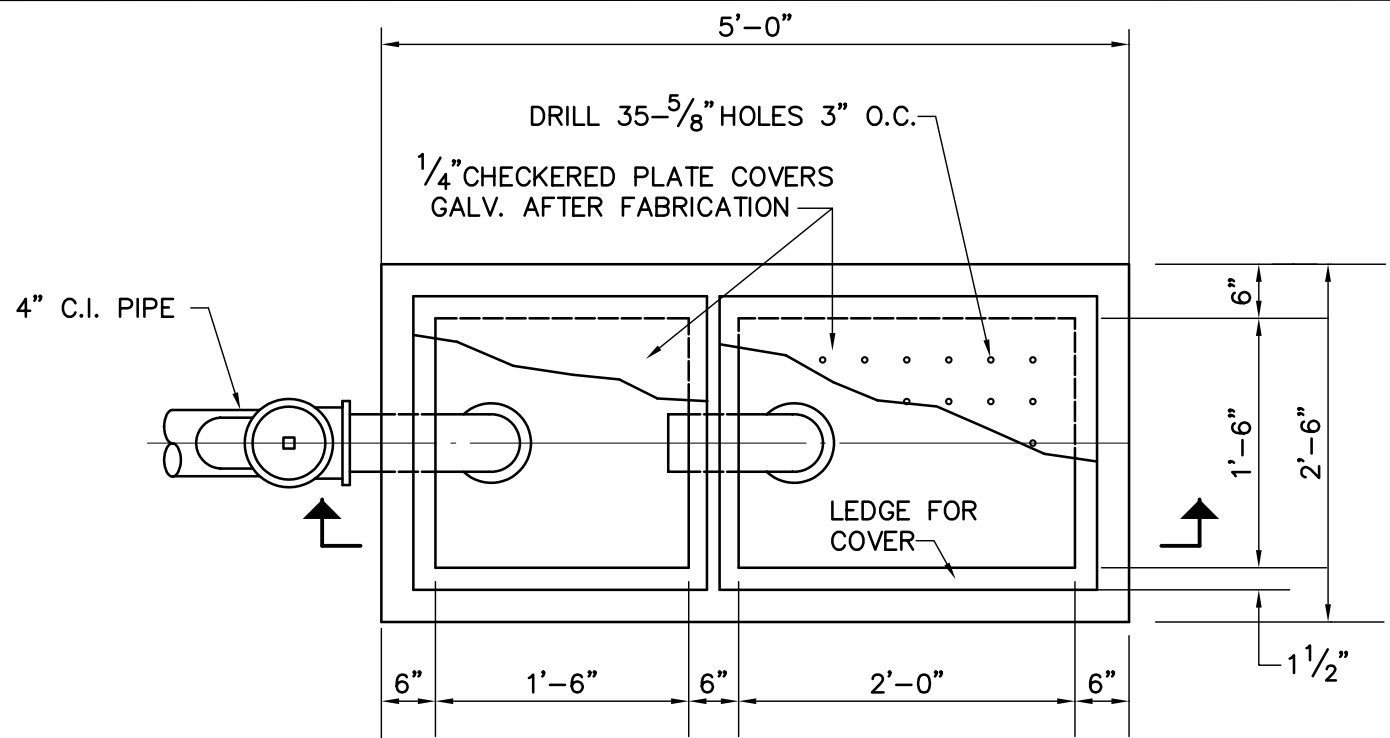
DATE: ... FEBRUARY 2003 ...

GRANADA SANITARY DISTRICT
STANDARD DETAIL

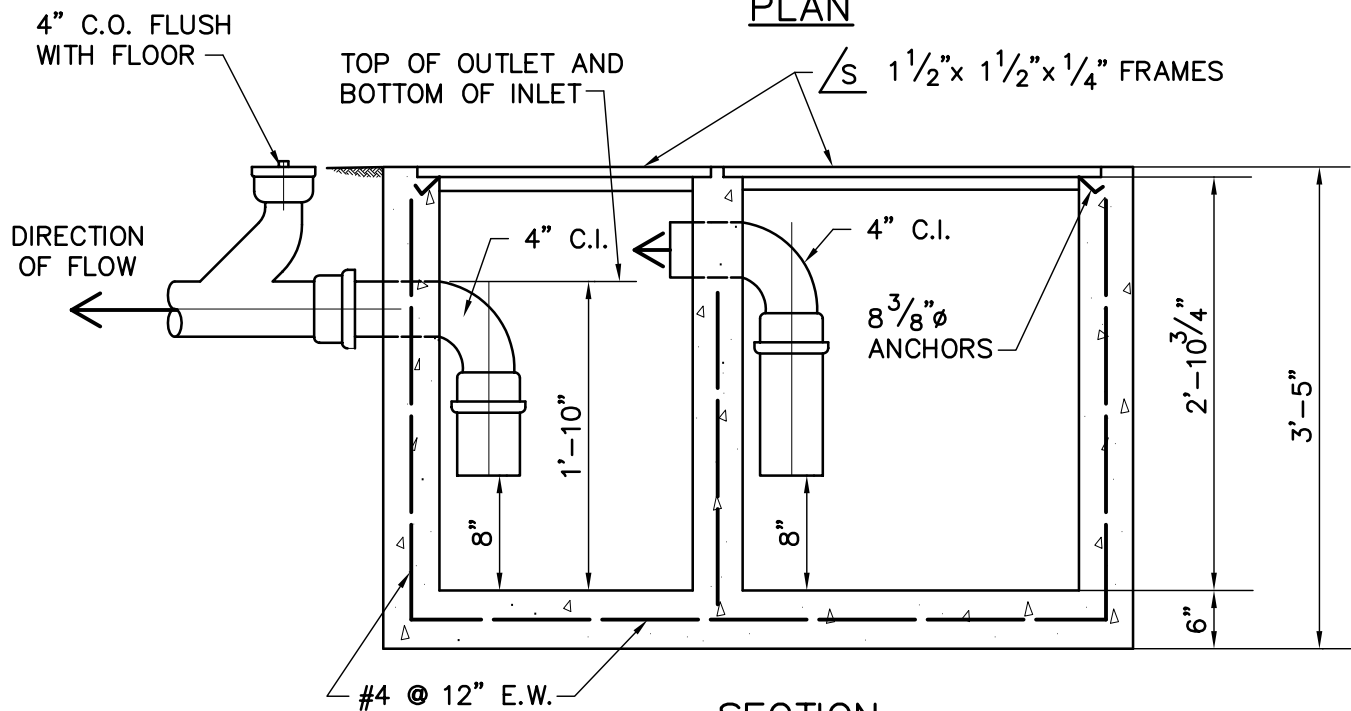
**GRINDER PUMP SYSTEM
CONNECTION TO
GRAVITY MAIN SYSTEM**

STANDARD No.

19



PLAN



SECTION

NOTE:

THE SIZE OF THE INTERCEPTOR SHALL BE DETERMINED BY THE UNIFORM PLUMBING CODE APPENDIX H TABLE H-1. THE UNIT SHOWN IS THE MINIMUM RESIDENTIAL UNIT.

NOT TO SCALE

APPROVED BY:

...HOWARD L. HOFFMAN...

DATE: FEBRUARY 2003

GRANADA SANITARY DISTRICT STANDARD DETAIL

GREASE & SAND INTERCEPTOR

STANDARD No.

20